

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO

**SECOND SUPPLEMENTAL  
INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

**Complete If Known**

Complete if Known	
Application Number	10/551,054
Filing Date	\$371 Date: September 23, 2005
First Named Inventor	BACHMANN, Martin F.
Art Unit	1648
Examiner Name	MOSHER, Mary
Attorney Docket Number	1700.0590000/BJD/WBC

[illegible]

**FOREIGN PATENT DOCUMENTS**

[illegible]

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04.

form with next communication to applicant. Applicant's unique creation designation number (optional). <sup>3</sup>See Annex 1. <sup>4</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>5</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>6</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>7</sup>Applicant is to place a check mark here if English language Translation is attached.

here if English language Transaction is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO <b>SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)			<b>Complete If Known</b>		
			Application Number	10/551,054	
			Filing Date	\$371 Date: September 23, 2005	
			First Named Inventor	BACHMANN, Martin F.	
			Art Unit	1648	
			Examiner Name	MOSHER, Mary	
Sheet	1	of	4	Attorney Docket Number	1700.0590000/BJD/WBC

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	NPL135	Allison (1994) Int J Technol Assess Health Care 10(1):107-20 -- Adjuvants and immune enhancement.	
	NPL136	Azuma (1992) Vaccine 10(14):1000-6 -- Synthetic immunoadjuvants: application to non-specific host stimulation and potentiation of vaccine immunogenicity.	
	NPL137	Bird (1987) Trends Genet. 3(12):342-347 -- CpG islands as gene markers in the vertebrate nucleus	
	NPL138	Branda (1993) Biochem Pharmacol 45(10):2037-43 -- Immune stimulation by an antisense oligomer complementary to the <i>rev</i> gene of HIV-1.	
	NPL139	Cooper (August 2004) Vaccine 22(23-24):3136-43 -- Safety and immunogenicity of CPG 7909 injection as an adjuvant to Fluarix influenza vaccine.	
	NPL140	Francois (1988) Clin Immunol Immunopathol 48(3):297-306 -- Examination of the inhibitory and stimulatory effects of IFN- $\alpha$ , - $\beta$ , and - $\gamma$ on human B-cell proliferation induced by various B-cell mitogens.	
	NPL141	Gavett (1995) J Exp Med 182(5):1527-36 -- Interleukin 12 inhibits antigen-induced airway hyperresponsiveness, inflammation, and Th2 cytokine expression in mice.	
	NPL142	Gilkeson (1989) J Immunol 142(5):1482-6 -- Induction of anti-double stranded DNA antibodies in normal mice by immunization with bacterial DNA.	
	NPL143	Gursel (2001) J Immunol 167(6):3324-8 -- Sterically stabilized cationic liposomes improve the uptake and immunostimulatory activity of CpG oligonucleotides.	
	NPL144	Halperin (June 2003) Vaccine 21(19-20):2461-7 -- A phase I study of the safety and immunogenicity of recombinant hepatitis B surface antigen co-administered with an immunostimulatory phosphorothioate oligonucleotide adjuvant.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO <b>SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)				<b>Complete If Known</b>	
				Application Number	10/551,054
				Filing Date	\$371 Date: September 23, 2005
				First Named Inventor	BACHMANN, Martin F.
				Art Unit	1648
				Examiner Name	MOSHER, Mary
Sheet	2	of	4	Attorney Docket Number	1700.0590000/BJD/WBC

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	NPL145	Holt (1994) Lancet 344(8920):456-8 -- A potential vaccine strategy for asthma and allied atopic diseases during early childhood.	
	NPL146	Hsu (1996) Nat Med 2(5):540-4 -- Immunoprophylaxis of allergen-induced immunoglobulin E synthesis and airway hyperresponsiveness in vivo by genetic immunization.	
	NPL147	Joseph (September 2002) Vaccine 20(27-28):3342-54 -- Liposomal immunostimulatory DNA sequence (ISS-ODN): an efficient parenteral and mucosal adjuvant for influenza and hepatitis B vaccines.	
	NPL148	Kataoka (1992) Jpn J Cancer Res 83(3):244-7 -- Antitumor activity of synthetic oligonucleotides with sequences from cDNA encoding proteins of <i>Mycobacterium bovis</i> BCG.	
	NPL149	Kline (1996) J. Invest Med 44(7):380A -- CpG motif oligonucleotides are effective in prevention of eosinophilic inflammation in a murine model of asthma	
	NPL150	Kuramoto (1992) Cancer Immunol Immunother 34(5):283-8 -- Induction of T-cell-mediated immunity against MethA fibrosarcoma by intratumoral injections of a bacillus Calmette-Guérin nucleic acid fraction.	
	NPL151	Lotz (1987) J Rheumatol 14(1):42-5 -- Effects of recombinant human interferons on rheumatoid arthritis B lymphocytes activated by Epstein-Barr virus.	
	NPL152	McIntyre (1993) Antisense Res Dev 3(4):309-22 -- A sense phosphorothioate oligonucleotide directed to the initiation codon of transcription factor NF-κ B p65 causes sequence-specific immune stimulation.	
	NPL153	Merritt (1965) J Immunol 94():416-22 -- Studies on the Adjuvant Action of Bacterial Endotoxins on Antibody Formation. VI. Enhancement of Antibody Formation by Nucleic Acids.	
	NPL154	Messina (1991) J Immunol 147(6):1759-64 -- Stimulation of in vitro murine lymphocyte proliferation by bacterial DNA.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO <b>SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)		<b>Complete If Known</b>			
		Application Number	10/551,054		
		Filing Date	\$371 Date: September 23, 2005		
		First Named Inventor	BACHMANN, Martin F.		
		Art Unit	1648		
		Examiner Name	MOSHER, Mary		
Sheet	3	of	4	Attorney Docket Number	1700.0590000/BJD/WBC

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	NPL155	Messina (1993) Cell Immunol 147(1):148-57 -- The influence of DNA structure on the <i>in vitro</i> stimulation of murine lymphocytes by natural and synthetic polynucleotide antigens.	
	NPL156	Mojcik (1993) Clin Immunol Immunopathol 67(2):130-6 -- Administration of a phosphorothioate oligonucleotide antisense to murine endogenous retroviral MCF <i>env</i> causes immune effects <i>in vivo</i> in a sequence-specific manner.	
	NPL157	Nohria (1994) Biotherapy 7(3-4):261-9 -- Cytokines as potential vaccine adjuvants.	
	NPL158	Pisetsky (1993) Mol Biol Rep 18(3):217-21 -- Stimulation of <i>in vitro</i> proliferation of murine lymphocytes by synthetic oligodeoxynucleotides.	
	NPL159	Pisetsky (1994) Life Sci 54(2):101-7 -- Stimulation of murine lymphocyte proliferation by a phosphorothioate oligonucleotide with antisense activity for herpes simplex virus.	
	NPL160	Raz (1996) Proc Natl Acad Sci U S A 93(10):5141-5 -- Preferential induction of a Th <sub>1</sub> immune response and inhibition of specific IgE antibody formation by plasmid DNA immunization.	
	NPL161	Saiki (1988) Vaccine 6(3):238-44 -- Induction of tumoricidal macrophages and production of cytokines by synthetic muramyl dipeptide analogues.	
	NPL162	Sato (1996) Science 273(5273):352-4 -- Immunostimulatory DNA sequences necessary for effective intradermal gene immunization.	
	NPL163	Uhlmann (March 2003) Curr Opin Drug Discov Devel 6(2):204-17 -- Recent advances in the development of immunostimulatory oligonucleotides.	
	NPL164	Verthelyi (2001) J Immunol 166(4):2372-7 -- Human peripheral blood cells differentially recognize and respond to two distinct CPG motifs.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form **with** next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO <b>SECOND SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (Use as many sheets as necessary)			<b>Complete If Known</b>		
			Application Number	10/551,054	
			Filing Date	\$371 Date: September 23, 2005	
			First Named Inventor	BACHMANN, Martin F.	
			Art Unit	1648	
			Examiner Name	MOSHER, Mary	
Sheet	4	of	4	Attorney Docket Number	1700.0590000/BJD/WBC

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	NPL165	Verthelyi (April 2004) AIDS 18(7):1003-8 -- CpG oligodeoxynucleotides improve the response to hepatitis B immunization in healthy and SIV-infected rhesus macaques.	
	NPL166	Weiner (2000) Declaration of Dr. George Weiner Under 37 CFR § 1.32, submitted in US Application No. 09/286,098, inventors Kreig <i>et al.</i> , 9 pages.	
	NPL167	Weiner (1997) Proc Natl Acad Sci U S A 94(20):10833-7 -- Immunostimulatory oligodeoxynucleotides containing the CpG motif are effective as immune adjuvants in tumor antigen immunization.	
	NPL168	Yamamoto (1994) Antisense Res Dev 4(2):119-22 -- Ability of oligonucleotides with certain palindromes to induce interferon production and augment natural killer cell activity is associated with their base length.	
	NPL169	Yamamoto (1994) Microbiol Immunol 38(10):831-6 -- Lipofection of synthetic oligodeoxyribonucleotide having a palindromic sequence of AACGTT to murine splenocytes enhances interferon production and natural killer activity.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Rev. 11-